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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

First Named Inventor : Haines et al.	
Appln. No.: 09/894,821	
Filed : June 28, 2001	Group Art Unit: 2188
For : SEQUENTIAL VECTORED BUFFER MANAGEMENT	Examiner: Gary J. Portka
Docket No.: S01.12-0711/STL 9608	

REPLY BRIEF

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is in response to the Examiner's Answer dated December 2, 2004.

I. Claims on Appeal - Rejection of Claim 9 Maintained

In the Examiner's Answer, the rejection of claims 1-2, 10 and 20 were withdrawn and therefore the Appeal involves only claim 9. Appellants thank the Examiner for withdrawing the rejection of claims 1-2, 10 and 20.

II. Consolidated Argument for Claim 9

For convenience of the Examiner and the Board, Appellants have included arguments made in the Appeal Brief which are applicable to claim 9.

In section 3 of the final Office Action, claim 9 was rejected under 35 U.S.C. §103(a) as being unpatentable over Krantz in view of Berning.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation either in the references themselves or in the

knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. In re Vaeck, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); M.P.E.P. §2143.

Under these criteria, the final Office Action fails to establish a *prima facie* case of obviousness of claims 9 based on the cited prior art.

Claim 9 features traversing all sequential entries in the data buffer. As correctly pointed out in the final Office Action, Krantz does not disclose that sequentially mapped entries are traversed in a data buffer. In fact, Krantz teaches or suggests nothing about accessing entries in the data buffer. As a result, the final Office Action relies on Berning. (Citing Abstract, col. 2 lines 64-67, and col. 3, lines 8-24 and 25-40.).

The final Office Action states, with respect to Berning, that the "teaching of allowing the traversal of sequential entries unabated as applied to Krantz is clearly equal to the recited traversal of entries prior to de-arbitrating." This statement is incorrect.

Berning discloses a data buffer 7 that is distinct from the disk 11 (see FIG. 1). "Consecutive" read and write requests disclosed in that reference are defined as "pure" or "near" sequential (col. 3, line 11). To determine that, logical block addresses (LBAs) are compared between current and immediate predecessor requests. One skilled in the art understands that LBAs is an addressing scheme used to access the disk 11 (see col. 2, lines 55-61). In fact, each discussion of sequential logical addresses is associated with features of the disk, such as "(cylinder, track, and head)" in col. 2, lines 55-61, and "a cyclic, concentric, multitracked disk or a cyclic, spiraltracked disk," in col. 3, lines 28-37. Thus, Berning deals with

consecutive requests to the disk 11, <u>not to data buffer 7</u>. Additionally, Berning teaches or suggests nothing about traversing all sequential entries in the data buffer, as recited in claim 9.

Since neither reference teaches or suggests traversing all sequentially mapped entries in a data buffer, the Examiner has failed to support a *prima facie* conclusion of obviousness (by not satisfying the third criterion for a *prima facie* conclusion of obviousness set forth in <u>Vaeck</u>) with regard to claim 9. Therefore, claim 9 is allowable.

In response to the Appellants' arguments to a previous Office Action, the final Office Action states "Berning describes requests for sequential entries in the device, and the description that this data is 'streamed' through the buffer necessarily includes that sequential data is consecutively accessed in the buffer." The phrase "necessarily includes that sequential data is consecutively accessed in the buffer" is entirely conclusory and, in reality, is nothing more but an inherency argument. Such a conclusion of inherency cannot be used to support an obviousness type rejection. "That which may be inherent <u>is not necessarily known</u>. Obviousness cannot be predicated on what is unknown." <u>In re Spormann</u>, 363 F.2d 444, 448, 150 USPQ 449, 452 (CCPA 1966) (emphasis added).

Even if the Examiner's conclusion of inherency could be used to support an obviousness type rejection, necessary evidence to support the conclusion of inherency has not been provided. Section 2112 of the Manual of Patent Examination and Procedure (MPEP) states that:

> "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic <u>necessarily</u> flows from the teachings of the

applied prior art." *Ex parte Levy,* 17 USPQ2d
1461, 1464 (Bd. Pat. App. & Inter. 1990).

Appellants respectfully submit that, without providing
the necessary support required in accordance with the above MPEP
section, the Examiner has not met the burden required to support
the rejection of claim 9 under 35 U.S.C. §103(a).

The final Office Action cites to no reference to
support the conclusion "necessarily includes that sequential data
is consecutively accessed in the buffer." No evidence of record
exists that shows one skilled in the art would recognize such. No
logical reasoning is provided, based on objective evidence, that
supports this conclusion. The final Office Action simply
provides nothing to show that traversing "sequentially mapped
entries in the memory, associated with the requested traversal,
prior to de-arbitrating itself from ownership of the memory" is
inherent in Berning or known to one skilled in the art.

As mentioned in the Appeal Brief, traditional traversal
engines have functioned such that even in situations were the
traversal engine was to traverse sequential buffer memory
addresses, the traversal engine would release ownership of the
buffer and re-arbitrate for access to each subsequent (or "next")
buffer address location. To overcome these problems, claim 9
provides a method of managing a data buffer, which includes
receiving a traversal request to traverse the data buffer,
arbitrating for ownership of the data buffer, and traversing all
sequential entries in the data buffer, beginning at an entry
point in the data buffer, corresponding to the traversal request
prior to voluntarily relinquishing ownership of the data buffer.
This is clearly not taught or suggested in cited references.
Thus, the Examiner's apparent conclusion of inherency is not
correct and not supported by the reference.

For the above reasons, a *prima facie* case of obviousness for claim 9 has not been made. Thus, claim 9 is allowable.

III. New Issues Raised in Examiner's Answer Regarding Claim 9

In section 10 of the Examiner's Answer, in addition to maintaining the rejection of claim 9 under 35 U.S.C. §103(a) based on Krantz and Berning, the Examiner included Goodwin et al., U.S. Patent No. 5,659,713, in the rejection, as purported evidentiary support for streaming data requiring sequential access.

First, as explained above, a conclusion of inherency cannot be used to support an obviousness type rejection. "That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown." In re Spormann, 363 F.2d 444, 448, 150 USPQ 449, 452 (CCPA 1966) (emphasis added).

Second, even if the Examiner's conclusion of inherency could be used to support an obviousness type rejection, the Goodwin reference does not provide the necessary evidentiary support for the conclusion of inherency.

As purported evidentiary support for streaming data requiring sequential access, the Examiner specifically cites to column 2, lines 29-33 of Goodwin et al., which are included below:

> The buffer system stores addresses used for read requests made by a CPU, and if a next sequential address is then detected in a subsequent read request, this is designated to be a stream (i.e., sequential reads).

Appellants respectfully point out that, although the cited language of Goodwin designates (or defines) sequential addresses to be a stream, the specific designation used in Goodwin does not support the Examiner's general conclusion that "data is 'streamed' through the buffer necessarily includes that sequential data is consecutively accessed in the buffer." Thus,

in view of the requirements of MPEP section 2112 (included above in section II), the Examiner's apparent conclusion of inherency remains incorrect.

In Section 11 of the Examiner's Answer, the Examiner responded to the Appellants' arguments regarding claim 9 by suggesting that the Appellants' statement that "Krantz teaches or suggests nothing about accessing entries in the data buffer" is incorrect because "the Abstract of Krantz describes arbitration of access to a buffer." Appellants respectfully point out that, while Krantz describes how access to the data buffer as whole by different accessing units can be arbitrated or controlled, there is no teaching or suggestion in Krantz regarding accessing individual entries within the data buffer.

In Section 11 of the Answer, the Examiner also suggests that the Appellants' statement that "Berning teaches or suggests nothing about traversing all sequential entries in the data buffer" is inaccurate since claim 9 relates only to traversing "all sequential entries in the data buffer corresponding to the traversal request." The Examiner then states that "a 'traversal request' as recited might be considered a single access request, or a plurality of access requests, and therefore all entries of the traversal request are by definition traversed." Appellants respectfully point out that the Examiner's statements are unrelated to claim 9, which requires traversing "all sequential entries" (and not a single entry or multiple non-sequential entries) corresponding to the traversal request, prior to voluntarily relinquishing ownership of the data buffer.

For the above reasons, Appellants respectfully submit that claim 9 is neither taught nor suggested by the references cited by the Examiner. Thus, Appellants respectfully request that the Board reverse the Examiner and find all pending claims allowable.

Respectfully submitted,

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